

THE EFFECTS OF MOTHER-CHILD SEPARATION: A FOLLOW-UP STUDY

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INTRODUCTION

The problem

Numerous investigations in the past twenty years have made it clear that young children, who for any reason are deprived of the continuous care and attention of a mother or mother-substitute, are not only temporarily disturbed by such deprivation, but may in some cases suffer long-term effects which persist. The evidence for this has been reviewed by Bowlby (1951), and reference to the literature therefore will be confined to those studies which are particularly relevant to the present investigation. This originated in an earlier study by Bowlby (1944), in which a number of delinquents referred to a child guidance clinic were compared with a number of non-delinquent children referred to the same clinic. First, it was found that a significantly higher proportion of the delinquents had suffered prolonged separation from their mothers in their first five years of life. Secondly, amongst these delinquents there were a number who were unable to make any permanent, mutually satisfying love relationship with other people; practically all these children with 'affectionless character' formation had been separated from their mothers for more than six months in early childhood, in contrast to the much smaller percentage of other delinquents who had had such an experience. These findings strongly suggested that a break in the continuity of the mother-child relationship at a critical stage in the development of the child's social responses may result in more or less

permanent impairment of the ability to make relationships.

This hypothesis, which had first been advanced by a number of workers in the years 1937-41 (Powdermaker, Levis & Touraine, 1937; Levy, 1937; Bowlby, 1940; Lowrey, 1940; Bender & Yarnell, 1941), is, of course, a special case of certain well-known psychoanalytic hypotheses regarding personality development. These state in effect that the core of healthy adult personality is the ability to make continuous stable and co-operative relationships with other persons, especially love objects, and that the satisfactory development of this ability in the adult is dependent on its healthy development in childhood, especially during the first three or five years of life, when the child is making his first social relationships—those with his parents. These psychoanalytic hypotheses state further that the majority of personality disturbances, and of neurotic and even psychotic symptoms, are the end-results of a dysfunctioning of the personality in the field of object relations. It was this general theoretical orientation which led Bowlby and others to pay special attention to early mother-child relations in their inquiries. Bowlby (1944) suggested that the frustration engendered by the separation was likely to cause, on the one hand, increased libidinal and aggressive impulses and, on the other, a lack of the usual inhibitory superego function, the development of which is dependent on satisfactory relationships with love objects. After his full review of the literature (1951) he later concluded that prolonged separation caused a variety of personality disturbances, of which the 'affectionless character' might be the most characteristic and the most serious.

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In order to test and refine these hypotheses it was clearly necessary amongst other investigations to compare the personality functioning of a number of children who were known to have experienced such separation in their early years with a control group of others. In 1948, when this study was begun, only one worker had reported such comparisons, namely, William Goldfarb (1943a, b, c, 1944a, b, 1945a, b, 1947 and 1949). Goldfarb had found marked differences between a group of foster-children who had spent most of the first three years of their lives in an institution, and another group, similar in other essential respects, who had from their early months lived with foster-families. These differences were apparent when both groups of children were between ten and fourteen years old and living with foster-parents, as well as when the children were younger and the institution group still in the institution. Many of the children who had spent the early part of their lives in an institution showed a very restricted capacity for making relationships with other people. This Goldfarb attributed to the lack of opportunity for developing relationships with adults in their early years. The institution children were also characterized by aggressive, distractible, uncontrolled behaviour, with impoverished, undifferentiated and passive personalities, their reactions being altogether at a primitive and infantile level. This was in spite of their having lived subsequently in foster-homes for a number of years. The personality of the severely institutionalized child as described by Goldfarb was thus similar in many respects to Bowlby's description of the affectionless character and the clinical descriptions of other workers.

Although Goldfarb's study goes a long way towards confirming the clinical hypothesis, his sample is only one of many which could be studied. In particular, it is characterized by an extremely severe degree of deprivation. For example, most of the children in his main study (1943b, 1944b, 1945a, b, 1949) had had no opportunity to make any relationship with a mother figure from soon after birth (the age

varied from one to nine months with a mean of 4½ months) until the age of 3½ years, and all had suffered permanent separation from their own mothers. Other follow-ups, therefore, seemed desirable both as further tests for the general hypothesis, about which there was then (1948) much more scepticism than there is now, and also to throw clearer light on the limits within which it held true. What, for instance, was the outcome in children who experienced less extreme degrees of deprivation? Bowlby's study of forty-four thieves had suggested that children whose separations had occurred neither so early nor for so long, although seriously disturbed, were less impoverished in personality than those described by Goldfarb and that they did not suffer intellectual deterioration. The present investigation was undertaken to explore the problem further.

The present investigation

In field studies of this kind there is much difficulty in selecting a suitable sample. An ideal sample, which would be a group of children for whom a separation experience in early childhood was the only adverse factor in their histories, hardly exists; almost always there is a medical or social reason for separation and this frequently in itself is emotionally disturbing. In any one study, therefore, it is impossible to isolate the effects of separation from the effects of other experiences. The best that can be done is to study a group of children whose experiences associated with separation are reasonably well known and to compare the characteristics of such a group with those found in other groups. It is because when this is done that common effects are found to follow separations characterized by widely differing associated variables that it is permissible to conclude that the responsible influence is in fact separation (see Ainsworth & Bowlby (1954) for an extended discussion of these problems).

The sample chosen for this study comprised a group of children who, because they had had tuberculosis, had been separated from their mothers in a sanatorium for a period of their

early childhood. There were several reasons for this choice:

(a) The sample was homogeneous in respect of separation experience and reason for separation; and the experience which the children had undergone, whilst constituting a fairly long separation, was appreciably less severe than that experienced by Goldfarb's children. Actually the experience proved less homogeneous than had been hoped for because some of the children had been separated before the sanatorium experience, sometimes in a succession of other hospitals, and others had suffered separations after being in the sanatorium.

(b) The illness was a reason for separation which seemed independent both of the likelihood of bad psychiatric inheritance and of unfavourable relationships within the family, in contrast to the reasons leading children to be sent to residential nurseries for long periods which are usually either that the child is unwanted and neglected or that the family has broken up. In the event, unfortunately, the family backgrounds proved less satisfactory than had been hoped for. Very many young tuberculous children come from families where other members, especially parents, have tuberculosis (by whom they have been infected) so that illness and death are common, with their attendant disturbed family relations and depressed economy. (Some account of these findings has been published elsewhere (Rosenbluth & Bowlby, 1955).)

(c) We were fortunate in finding a sanatorium which offered a good field for research, in that the children's ward had been continuously under the administration of the same physician and ward sister for the previous eight years. Thus the nature of the separation environment was known and was thought to have been reasonably similar for all children. The staff of the sanatorium was co-operative, and it was possible to establish links with the families of the children by means of the local chest clinics which had maintained contact with the children after discharge from the sanatorium.

The disadvantage of this sample, as of all other possible samples, is the unknown influence of the associated variables; in this case the children were ill during their separation and confined to their cots for rest during much of the time. To reduce the possible effects of such experience any child whose illness was complicated by either bone or abdominal infection was excluded from the sample, which was confined to children who had uncomplicated pulmonary tuberculosis. Even so, in assessing the outcome in these children the particular experiences in addition to separation which they had undergone must be remembered.

The main outcome of this study is the picture which has been obtained of the range and variation of personality pattern which exists in a group of school children all of whom have had a separation which, although prolonged, is not as extreme as that undergone by Goldfarb's group. These clinical appraisals were built up from data obtained from interviews of parents by a psychiatric social worker, amplified by reports from teachers, and from intelligence testing. An account of the range of personality patterns is given in Part IV.

Before this material is presented, however, the results are given of a comparison which was made between the present school behaviour of the sanatorium children and that of a control group of their class-mates, matched for age and sex, but random in regard to separation. This comparison which is given in Part III was made on the basis of data obtained from teachers' reports and intelligence testing. No interview data were obtained on the control group because of the well-known difficulties of obtaining co-operation from a control group and of the magnitude of the task of interviewing.

In addition to such scientific value as these findings may have, the project has been of value to the writers in drawing their attention to the great practical problem inherent in a follow-up study of this kind and to the limitations which the data obtained have for answering the theoretical and practical

questions raised in the investigation of the effects of maternal deprivation.

THE SAMPLES

The sanatorium group

The gross sample was obtained by extracting from the sanatorium records every child who had been admitted before the age of four years, between 1 January 1940 and 30 November 1948 inclusive, a period during which the ward regime was constant. From the gross sample there were eliminated children whose primary tuberculosis was complicated by bone or abdominal infection, who had left the county, who had gone into the care of other institutions, who had died, whose mothers were known to have died, or who were not yet of school age. The resulting sample consisted of sixty children, of whom forty-one were boys and nineteen girls. At the time the sample was selected it was believed that they had all returned to their homes and were attending schools in the county.* They had entered the sanatorium at various ages, up to four years, and had remained there for varying lengths of time. Since later it was found that twenty-two children had experienced a separation of two weeks or longer prior to entry to the sanatorium, often in other hospitals, age at

* Eight children were subsequently found not to be living with their own mother at the time of the home interview. In two cases the mother was alive, and in six she had died. Of the living mothers, one had separated from her husband leaving the child with him and the other lived with her own parents while the child lived with the parents of her deceased husband. Of the dead mothers, one had died prior to the child's sanatorium experience and it was to an adoptive mother (an aunt) that the child returned; the father, having remarried, was living separately. In the other five cases the mother had died after the child's return from the sanatorium; one of these children was living alone with the father; one was living with father and step-mother; one was cared for by other relatives, not by the father who had remarried; one was an orphan living with relatives; and one was an orphan living in a residential school, but with a relative as a guardian.

separation and length of separation take this into account. The range of age at the first known separation and the total length of separations up to the age of seven years is shown in Table 1.

Table 1. *Distribution by age at first known separation and total length of separation of sanatorium children*

Total length in months	Age at first known separation (in months)				Total
	0-11	12-23	24-35	36-47	
0-5	0	3	2	0	5
6-11	3	5	5	0	13
12-17	5	3	7	3	18
18-23	2	3	5	3	13
24+	3	1	3	1	8
Total	13	15	22	7	57†

† Accurate information on these points was not obtained in three cases (see later p. 216).

The age at follow-up (taken as the age of the child on 1 July 1950 when about half the investigation was completed) ranged from six years ten months to thirteen years seven months. The distribution by age at follow-up and by sex is shown in Table 2.

Table 2. *Distribution by age at follow-up and sex of sanatorium sample*

Age at follow-up	Boys	Girls	Total
6 years to 7 years 11 months	8	2	10
8 years to 9 years 11 months	13	10	23
10 years to 11 years 11 months	12	2	14
12 years to 13 years 11 months	8	5	13
Total	41	19	60

As is inevitable in a follow-up of this kind the children were widely scattered and were in no less than fifty-eight different schools, comprising primary, secondary modern, secondary grammar, two private schools, a special school for physically handicapped children

and a school for educationally subnormal children. Two children, at the time of assessment, were spending a short period at an open-air school.

Since the outcome of a separation experience is partly dependent on the child's experiences whilst away, it is necessary to give a brief description of the experiences undergone by these children.* The sanatorium ward comprises an arc of cubicles and small wards with large glass doors all fronting on to a concrete ramp leading to a lawn. On admission and for the following ten days the young child is placed by himself in a single cubicle adjoining the sister's office as a quarantine precaution. During these ten days he is nursed by a few senior nurses only, to help him over the initial disturbance of his new experience, and various medical examinations are conducted. Gastric lavage, which requires extraction of stomach content by means of tubing passed through the child's nose, may upset the child, so also in lesser degree does the taking of blood samples. Medical examination of this kind is repeated at intervals throughout treatment. As the children in the sample had uncomplicated primary tuberculosis, no surgical treatment was necessary; but when other conditions necessitated it, surgical intervention occurred, e.g. tonsillectomy. During at least the first three months of treatment the child is confined to his cot to provide maximum rest. In stages which vary greatly from child to child he is allowed up for increasing periods of play, culminating in a period of being up all day for some weeks before going home.

The nursing system, as is usual in hospital wards, does not provide substitute mothering for the children (which is possible only if the child is cared for by very few nurses) though in other respects nursing is good and the childrens' material needs are well provided for. Most of the nursing staff are students in training and have to move to other wards at short intervals and, since nursing is on a shift system, the

child's experience over a few months is that not only is his daily care shared by a number of nurses but nurses leave and new nurses come. Sister is permanent and the staff nurses stay for about six months. But it is no criticism of the nurses to say that under a system of this kind they cannot provide forty to sixty children with a sense of attachment to a trusted adult.

Nursery-school teachers and cleaning orderlies are more permanent than the nurses. If an unhappy new child is difficult with eating, a motherly cleaner may be delegated to comfort and persuade him for days or weeks until he is able to manage. Teachers give the children occupations in their cots on five days a week and in the nursery school when they become fit to attend; but their role is mainly that of teacher. The comprehensive care which a mother usually gives and which is largely experienced through bodily care in these early years is fragmented between different members of staff to the detriment of any attachment.

Variation in the children's experience of human relationships is mainly in their contact with their own families. Visiting time is two hours on Sunday afternoon and most children are visited then by their parents. But the sanatorium is twenty miles from London and difficult of access, and most visitors have to give up a whole day to the occasion. In some instances, therefore, parents alternate to give each other relief from the strain of weekly visiting over long periods and sometimes relatives deputize. Children whose parents are themselves ill or have died of tuberculosis are even more deprived of contact with parents.

Although the general experience of children undergoing treatment at this sanatorium was known, for the particular sample studied there was inevitably much that was unknown—the particular treatment experience of each child, the methods and attitudes of the nurses who handled him, the attitudes of visiting parents and relatives, and the child's subjective experience of illness. In addition, twenty-two

* We are indebted for this description to Mr James Robertson.

of these children were from one to five months in a variety of general hospitals while awaiting sanatorium vacancies; little is known of their experiences then, although the retrospective reports of parents often made reference to disturbed behaviour in the early stages of separation. Enough is known, however, to make it clear that in many important respects the experiences of these children had been much less severe than those of the children studied by Goldfarb. Whereas all of Goldfarb's group (1943b) had lost their mothers at some time during their first year of life, less than a quarter of the sanatorium group had begun separation before one year of age, and half of them had been over the age of two. Whereas Goldfarb's children were permanently separated from their mothers, first spending about three years in an institution and then placed with foster-parents, the majority of the sanatorium children, by being visited, retained contact with their families during the period of separation, and later returned home. Whereas all members of Goldfarb's group were in an institution for at least two years, only one in seven of the sanatorium children had so long an experience of hospital, the majority being away for less than eighteen months. The expectation therefore was that, though the children would show considerable personality disturbance, it would on average be less in degree than that shown by Goldfarb's sample and the disturbance might well vary considerably from child to child both in degree and the form taken.

The control group

The control group comprised children matched for age and sex with the sanatorium children. For each sanatorium child, the three children in the same school class who were nearest in age and of the same sex were chosen. The age, sex and class distributions for the controls are therefore the same as for the sanatorium children, although the control group is three times as large. Nothing was known about the controls except that they had not been in

the sanatorium during the period from which the sample was selected. In respect of separation, therefore, they are a random group and neither a non-separated group nor representative of the general population (see p. 217, footnote). They are also a random group in respect of home background, which, it can be assumed, varied from very good to very bad. They were selected from the same school classes as the sanatorium children, the same teacher reporting on all four children, so that any unreliability or bias of the teachers would be reflected also in the control group. The control group was thus, in the same way as the sanatorium group, scattered over fifty-eight different schools. In each class involved four children were concerned, i.e. one sanatorium child and three controls.

The actual selection of the control group proved more difficult than had been anticipated. Although the schools were most co-operative and helpful in allowing access, and the teachers gave up considerable time to filling in forms, the principles on which the control group was to be selected were not always understood. Initially, it was left to the teachers to select the controls from the class register according to the agreed criteria. It was found, however, that in some cases the age criteria were not strictly adhered to, and children who, for example, were thought representative of their age group or a credit to the school were occasionally selected. Thus the selection of controls had ultimately to be made by the field-workers, and it was necessary to check the selection of controls in each case, and in some cases to obtain new reports on some sanatorium children together with reports on fresh controls. For some of the sanatorium children there are thus two reports available, and for a few of these there are two sets of controls which meet the criteria for selection; in these cases the controls assessed by the teacher whose reports were judged to be the more reliable were used (see later for a discussion on the reliability of teachers' reports). In three cases reports on controls were not obtained because the sanatorium child was

attending a special school.* These considerable variations in procedure account for the fact that the samples used for the statistical comparisons are never greater than fifty-seven and are often many fewer.

Execution of the project

The preparation for the project and in particular the selection of the sample involved a great deal of preliminary field-work. The county medical officer invited the medical superintendent at the sanatorium and the tuberculosis officers in charge of the nine chest clinics to give facilities for the follow-up, and the field-workers visited each unit and discussed plans and purposes in detail. At each stage care was taken to gain co-operation on the basis of understanding and appreciation of objectives, and much time was given to discussions with everyone whose help was sought —physicians, welfare officers, almoners, nurses and teachers among others. Very generous co-operation was obtained. Clerical staff at the sanatorium abstracted all possibly eligible children from records according to the age and period criteria, and the field-workers refined the sample by recourse to chest clinic and education authority records. By this means every child who remained in the county was

traced, sometimes through several changes of address. Finally, permission was obtained from the local education officers to visit the head teachers of the schools which the children attended.

A number of personnel were engaged on the project. The field-workers, referred to above, were two members of the research team, a psychiatric social worker (James Robertson) and a psychologist (Mary Boston). For purposes of visiting the fifty-eight schools and testing the children, these workers were assisted by six educational psychologists who were approaching the end of their training. The analysis of the data obtained in schools was undertaken by two research psychologists (Mary Boston and Mary Ainsworth). The interviewing of parents described in Part IV was undertaken by a second research psychiatric social worker (Dina Rosenbluth), who joined the two research psychologists in the analysis of the data obtained and in making the ratings and classifications based on them. Finally, to avoid bias, for the purposes of certain of the comparisons made two clinical psychologists, not associated with the research and not informed of the results, undertook (a) the evaluation of the items on the teachers' report forms and (b) an assessment of the children's behaviour in the test situation.

* Not obtaining controls in these three cases was mistaken. At the time the decision was made, it was assumed that a randomly selected group of the class-mates of the sanatorium children would constitute a cross-section of the *normal* school population, and on these grounds children attending special schools because of some disability were excluded from the control group as not normal. It was later realized that the control group is representative neither of a normal school population nor of the school population as a whole; it is merely a group of the classmates of the sanatorium children. As such it should have included the classmates of the three children in special schools, just as it included the class-mates of children who were in the lower streams of academic achievement. In statistical comparisons of the sanatorium group with the control group these three children have inevitably been omitted.

COMPARISON WITH CONTROLS

Nature of data

The data used for the comparison of the sanatorium children with the controls comprise information on the present behaviour, educational progress and intelligence of the children and are derived from two independent sources: (a) a teacher's report form, (b) a psychologist's report.

Teacher's report form

This form (see Appendix) was designed to help teachers to give a description of the child's behaviour as seen in school. The first part consists of twenty-two items, covering the child's

relationships with the teacher and with other children and his work and play activities. For each item there are two, three or four choices covering all likely manifestations of behaviour, only one or two of which can be regarded as indicating satisfactory adjustment, the others indicating deviations in different directions or degrees. The remaining parts of the form give the teacher the opportunity to note any symptoms which may have been observed, to comment on the child's attendance, health and school progress and to make any general comments on the child or his family which he cares to give. The information requested on the form was carefully limited to concrete items of behaviour of which the teacher might be expected to have first-hand knowledge and avoided all other questions, including those relating to personality traits. Experience of report forms built on these lines had been obtained in the British Army during the war, and the form used in this investigation had been tried out in connexion with another project.* By framing the report in this way it was hoped partly to avoid the well-known unreliability of questionnaires, especially those which ask for global assessments of such complex functions as neurotic and delinquent tendencies (see, for instance, the discussion by Burt, 1945).

Each teacher co-operating in the investigation was asked to complete forms for the sanatorium child and the three controls in his class. Where possible, the form was introduced to the teacher concerned in a personal interview and the nature of the investigation and method of filling up the form was discussed; in some cases, however, a discussion could not be held with the class teacher, and the head teacher explained what was required, a procedure which proved to be very unsatisfactory. The forms were left with the teachers to be filled in and returned. Sixty different teachers were

concerned, as each of the sanatorium children was in a different class.

Unfortunately, it did not seem possible for the teachers to remain ignorant of which among the four children was the sanatorium child. In many cases the teacher was already aware that the child had been in a sanatorium. In any event it was felt necessary to explain the nature of the research to the teachers in order to gain their co-operation in the selection of controls and in reporting on the adjustment of the children. They were told that a follow-up of sanatorium children was being conducted in order to see how children who had been in hospital settled down on returning home, and that therefore it was desired to compare the present behaviour and school work of the sanatorium child with a random group of his class-mates. The teachers were not told what differences might be expected.

It was recognized from the outset that the reliability of the teacher's reports for the purpose in hand was likely to be uneven both because of the unevenness of the briefing, inevitable when fifty-eight different teachers had to be briefed, and because of individual differences between teachers both in their knowledge of the children and in their ability to report objectively on them. Nevertheless it was believed that the differences between the sanatorium and control children might be sufficient to be clearly manifest even with such a relatively crude instrument—a belief which was not confirmed. A special problem, which experience in the British Army had shown to be difficult to eliminate entirely, is the reluctance of a superior, when reporting on someone for whom he is responsible, to mark items which he feels to be adverse to the subject even though these are phrased to read very mildly. Although the report form used in this investigation had been constructed to allow for this reluctance, experience with its use showed that the difficulty had not been wholly overcome. In some cases, therefore, information felt by the teacher to be adverse to the child has certainly not been recorded. It should be noted that such bias as this introduces must tell

* This was an attempt to obtain a full psychological and psychiatric picture of a representative sample of eight-year-old boys in a school in a London suburb.

against the hypothesis being confirmed, since more adverse information is to be expected in the case of the sanatorium group than in the controls.

Psychologist's report

Each child in the sanatorium and control groups was given a Stanford-Binet Test (1937 revision, Form L), and a report was written commenting on the result and on the behaviour of the child in the test situation. Unfortunately the testers were not briefed regarding the type of report to be written; although they all followed the usual clinical practice of commenting on the behaviour of the child in the test situation, the various testers differed considerably in the amount of detail given.

The testing conditions varied considerably from school to school and were sometimes far from ideal. Most schools were able to provide a separate room in which the children could be tested, but, in one or two, odd corners had to be used which were not entirely free from interruption. The children were told that four of them had been picked at random from the school to take part in an investigation. They were not tested in any particular order; the teacher was usually asked to send the most confident child first. The testers already knew which child was the sanatorium child, since a major purpose of their visit to the school was to enlist the co-operation of the teachers.

The data deriving from these two independent sources permitted three principal comparisons to be made between the sanatorium children and the controls:

- (a) a comparison of behaviour using data from the teacher's report form,
- (b) a comparison of intelligence quotients deriving from the psychologists' reports,
- (c) a comparison of the children's behaviour in the test situation, also deriving from the psychologist's reports.

The question arises whether and to what extent the validity of the data on which these comparisons depend is impaired by the fact that both the teachers and the psychologists

knew which child was which when making their reports. In the case of the teachers the likelihood seems remote, since at this date (1949) little was known by the public of the hypotheses being tested. There is a greater chance of its having influenced the psychologists, though, apart from the research psychologist, even they were not well informed in regard to deviations to be expected. Though there is no way of estimating to what extent such influences may account for the findings, the consistency of the two independent sets of data in respect of certain deviations from the norm suggests that both sets are tolerably valid. This is discussed further after the comparisons have been presented.

Comparison of intelligence quotients

Since this is the simplest of the comparisons to be made, it is convenient to consider it first. Goldfarb in his comparison of institution and foster-home children found that the severely institutionalized children were not only extremely impoverished in personality, but also showed serious intellectual retardation. In his principal inquiry (1943b) the mean intelligence quotient of his institution children was 72.4, which was much lower than that of his controls, and the children were markedly deficient in ability to think abstractly; their performance in various conceptual tests was lower even than that of a number of mentally defective children. There was therefore a possibility that the sanatorium children might have been affected in the same way. However, no difference of significance was found in this respect between the two groups. Means and distribution of I.Q. are shown in Table 3. Although the distribution shows a tendency for more of the sanatorium children than the controls to be in the lower ranges of I.Q., tests of significance do not permit us to have confidence in the result.

The fact that the controls were selected from the same classes as the sanatorium children, and that in many cases these classes were organized as 'streams', would of course tend

to minimize any difference in I.Q. between the groups, and it might be a mistake to assume too quickly that the trend present in Table 3 is of no consequence. However, the absolute level of I.Q. in the sanatorium group is not influenced by this defect of sampling and it is notable that it is *above average*.

Although these findings are similar to those of Bowlby (1944) who in his study of affectionless thieves found a mean I.Q. of 108, they are in sharp contrast to those of Goldfarb (1943b). The difference may well reflect the fact that the sanatorium children, like Bowlby's thieves, had had a less severe experience. If this different level of I.Q. between groups of children with different deprivation experiences is confirmed in future investigations, it will be clear that the severe intellectual deterioration of the kind described by Goldfarb only occurs when children are subjected to privations characterized by one or perhaps a combination of the three features present in Goldfarb's sample—deprivation which is complete, prolonged and starts very early in life.

Although in the present investigation there was no evidence that level of I.Q. was related to length of deprivation, there was evidence suggestive that the age at which it starts is of consequence. Table 4 shows the mean I.Q.'s and distribution of cases obtained when the sanatorium children are divided into two subsamples—those who had been under two years of age on admission to hospital and those who had been over two.

As regards means it will be seen, first, that the mean of the children entering hospital before their second birthdays is lower than that for those entering after but not significantly so, and, secondly, that the mean I.Q. of the younger group is a little over 100. On the other hand, the distribution of cases is significantly different, more of the children who entered hospital younger falling into the lower ranges of intelligence. This finding suggests that without further evidence it would be unwise to be too confident that experiences of the kind undergone by the children reported on here are without effect on later intelligence.

Table 3. *Means and distribution of I.Q.'s of thirty-six sanatorium children and their controls*

Sample	Means	Distribution										Total
		70+	80+	90+	100+	110+	120+	130+	140+	150+		
Sanatorium	107 ± 22.8	3	4	7	6	5	7	4	0	0		36
Control	110 ± 16.8	2	12	13	31	22	15	8	2	3		108

$\chi^2 = 2.56$ for one degree of freedom; P lies between 0.20 and 0.10.

Table 4. *Means and distribution of I.Q.'s of fifty-six sanatorium children in relation to age of entry to hospital**

Age of entry	Means	Distribution										Total
		70+	80+	90+	100+	110+	120+	130+	140+	150+		
2 years and under	102 ± 17.6	2	6	7	5	2	2	3	0	0		27
Over 2 years	110 ± 15.7	2	2	4	4	9	6	2	0	0		29

$\chi^2 = 7.08$ for one degree of freedom; P is less than 0.01.

* In constructing Table 4 age is taken as the age at which the child first entered a hospital or institution for a stay lasting longer than four weeks. In most cases, though not quite all, this was either the sanatorium itself or a hospital to which they went immediately prior to transfer to the sanatorium. All sanatorium children excepting four for whom relevant data are lacking are used in this comparison.

Comparisons of behaviour in test situation

In the same study Goldfarb (1943b) had found that severely institutionalized children showed in a test situation little capacity for sustained effort, a tendency to undertake only what was easy, a tendency to falter quickly under difficulty and marked passivity. Although in this investigation the primary purpose of the intelligence testing was to see whether the sanatorium children showed any intellectual retardation, a glance through the psychologists' reports of behaviour in the test situation suggested that there were differences between the two groups of the kind described by Goldfarb. To test this a classification of the children into four groups was made:

Group P comprised those children who were reported to show keen interest or enjoyment in the test situation.

Group Q comprised children who responded satisfactorily to the test situation, but there was no report of special enjoyment, of dependence on the examiner or of special desire to please. This proved to be rather a miscellaneous group.

Group R consisted of children whose ability to respond seemed particularly dependent on the relationship with the tester, manifested by an over-anxiety to please or by a particular need for encouragement and praise.

Group S comprised those children who failed to respond in the situation. In most cases a lack of 'rapport' was reported, accompanied either by nervousness, inhibition and overt anxiety, or by indifference, lack of warmth and application.

The classification of reports was made by two clinical psychologists who were ignorant of the sample to which the child belonged; they made their judgements first independently and then in conference. A fairly high degree of agreement was reached independently and the remaining differences were resolved in conference. Results are given in Table 5.

It will be seen that only half the sanatorium children were able to respond adequately to the test situation (groups P and Q) in comparison

Table 5. *Comparison between thirty-one sanatorium children and their controls in respect of behaviour in test situation*

Sample	Test behaviour group				Total
	P	Q	R	S	
Sanatorium	10	6	3	12	31
Control	29	38	7	19	93

$\chi^2 = 4.40$ for one degree of freedom (P+Q vs. R+S); P lies between 0.05 and 0.02.

with nearly three-quarters of the controls. Of the remaining half, a few required special encouragement before they took part (group R), but most were unable to respond even with encouragement (group S). When those showing adequate response (P and Q) and those showing inadequate response (R and S) are grouped together, the difference in distribution of children in the two samples is significant statistically. This finding that more of the sanatorium children than the controls are unable to respond satisfactorily in the test situation is in conformity with Goldfarb's findings and suggests that the sanatorium children have been affected by their separation experience. Unfortunately the form of the two sets of data makes it impossible strictly to compare Goldfarb's findings with those presented here and so to determine whether or not the expectation is borne out that the children in Goldfarb's sample are the more impaired.

Comparisons using teacher's report forms

Before comparisons were made, each statement on the teacher's report form was evaluated on a three point scale—plus for a statement which seemed to indicate favourable adjustment, minus for a statement indicating unfavourable adjustment and zero for one which gives no clear evidence of either. This evaluation was made by an experienced clinical psychologist in consultation with colleagues, none of whom knew how the teachers had completed the forms.

The first step in the analysis was to compare, in respect of each item on the report form, the

full sample of fifty-seven sanatorium children with their controls. When this was done, using the χ^2 technique, although virtually all the differences found were adverse to the sanatorium group, none reached a level of statistical significance. The question thus arose whether there were in fact no differences of consequence in the school behaviour of the two groups of children or whether the methods used for assessing it were too crude to bring to light such differences as existed. The latter possibility was not unlikely, since apart from the report form being a very rough and ready instrument it was known that, thanks to inadequate briefing and other causes, some of the teachers had rendered reports the reliability of which was particularly suspect. It was therefore decided to scrutinize each quartet of reports (one sanatorium child and three controls) and to place them into two categories —quartets of reports more likely to be reliable and quartets of reports less likely to be reliable; those in the latter category were discarded. This resulted either in the elimination from the sample of the sanatorium child in question together with his controls, or, where a second teacher had reported on the same sanatorium child with a set of properly selected controls, in using the reports of this second teacher.

In deciding into which category a teacher's reports were to be placed, the following criteria of unreliability were used:

(a) Inconsistency in the checking of items in the teacher's report form, e.g. checking item 2, 'He makes friends very easily with other children', and item 17, 'He does not make any friends at all'.

(b) Inconsistency between the items checked and the description of the child given by the teacher at the end of his report; for example, if the teacher checked a variety of items suggesting maladjustment and then described the child as 'perfectly normal in every way'.

(c) Inconsistency between the teacher's report as a whole and points later brought out about the child in discussion with the research worker and recorded in the report of the

school visit. For example, one teacher expressed concern about the behaviour of a child, including a strong suspicion of pilfering, although his written report gave no indication of any difficulties.

(d) Strong suspicion that the teacher had mistrusted the research and had 'covered up' difficulties in his report, this judgement having been made by the psychologist after discussion with the teacher and recorded in the report of the school visit.

(e) Lack of discrimination in the reports of the four children rated by the same teacher; namely, where all or nearly all items were checked identically for all four children, the items in question usually being those which indicated good adjustment.

The teacher's reports and the reports of school visits were studied by the two research psychologists working independently, and teachers were eliminated as unreliable only when there was agreement between their independent judgements that one of the above criteria had been met. The outcome was that the reports on twenty-five sanatorium children and their controls were judged unreliable and those on thirty-two sanatorium children and their controls judged reliable.

When comparisons were made between the two groups of children on whom the reliable reports had been rendered, a clear difference was found. Altogether there are twenty-eight items on the report form in which differences might be found —twenty items in Part I (item 1 being excluded, having been designed as a 'buffer' not relevant to the issue under investigation) and eight items in Part II. On eleven of these twenty-eight items a larger proportion of sanatorium children than of the controls was given a marking indicating maladjustment. In the remaining seventeen items differences between the two groups were negligible, though a majority of such slight trends as there were suggested that the sanatorium children were less well adjusted. In Table 6 the eleven items which give a reasonably clear trend, in all cases showing the sanatorium group to be less well adjusted, are arranged, together with

the values of χ^2 and P . In calculating the χ^2 , statements evaluated as plus and zero have been considered together and contrasted with those evaluated as minus. (For evaluations see the Appendix where the raw figures are also given.) Although only the first five of these items show a difference which is statistically significant, the consistency with which all the trends are adverse to the sanatorium group is striking.

Table 6. *Items on teachers' report form which differentiate the two groups; all show sanatorium children to be less well adjusted than control children (reliable reports only)*

Item	χ^2	P lies between
27	8.78	0.01 and 0.001
14	6.08	0.02 and 0.01
11	5.83	0.02 and 0.01
8	4.71	0.05 and 0.02
9	4.09	0.05 and 0.02
2	3.02	0.10 and 0.05
25	2.47*	0.20 and 0.10
6	2.30	0.20 and 0.10
26	1.95	0.20 and 0.10
23	1.53	0.20
10	1.28	0.30 and 0.20

* Indicates that Yates's correction has been used in calculating χ^2 .

A comparison between the individual children in the two samples can be made by using as a criterion these five significant items. In constructing Table 7, each child has been scored for the presence in his report of the statements which indicate maladjustment which occur within these items. Thus the maximal score of 5 indicates that that child was reported upon adversely in respect of all five items. Of the sanatorium children twelve, or more than one-third, are reported upon adversely for four or more of these items, against only five of the three times larger control group. The likelihood that the differences shown in the table are due to chance is less than one in a thousand. This difference remains significant when all cases, reliable and

Table 7. *Comparison between sanatorium and control children in respect of five items on report form which show statistically significant differences between samples (reliable reports only)*

Sample	No. of items shown						Total
	0	1	2	3	4	5	
Sanatorium	8	4	5	3	10	2	32
Control	40	21	16	14	3	2	96

$\chi^2 = 22.17$ for four degrees of freedom (4 and 5 pooled); P is less than 0.001.

unreliable, are considered together ($\chi^2 = 13.22$ for four degrees of freedom; P is at 0.01), although when those cases on which only unreliable reports are available are considered alone no differences between the two groups are apparent. In addition to pointing to a difference between the sanatorium and control children the figures in Table 7 suggest a relatively high incidence of maladjustment amongst the sanatorium children—a conclusion confirmed when data from other sources are considered (see next section).

So far we have been concerned only with the presence or absence of maladjustment, not with the nature of the unfavourable responses shown. When this is examined by noting the particular responses which differentiate the sanatorium children from the controls it is found that they are, with the one exception of undue roughness, those of withdrawal and apathy. Table 8 gives particulars of the five items from Table 6 which show a significant difference between the two groups, together with the number of sanatorium children and controls who are reported as exhibiting each response. It should be noted that, although the description 'day-dreaming' was used in the report form, this is really a colloquial way for the teacher to report withdrawal of attention; it does not refer to the child's phantasy life. In the discussion, therefore, day-dreaming is placed in quotation marks.

The examination of Table 8 makes it clear that there is a tendency for the sanatorium

Table 8. *Items on report form which show statistically significant differences between sanatorium and control groups*

Item	No. of children	
	Sanatorium	Control
27 'Day-dreaming'	13	15
14 He does not seem to know what to do unless he is told	10	12
11 His attention wanders rather frequently	18	31
8* { He seems diffident about competing with other children	7	8
{ He does not seem to care how he compares with other children	7	12
9* He is liable to get unduly rough during playtime	7	7
	32	96

* Question 8 contains three items evaluated minus. Of these, one, 'He is very competitive with other children', proves not to discriminate between the two samples. Similarly, of the two items evaluated minus in question 9, one, 'He seems a bit frightened of rough and tumbles', also proves not to discriminate. They have, therefore, both been omitted from Table 8.

children to exhibit the syndrome of 'day-dreaming', diffidence and a lack of initiative and concentration. It will be noted that these are the characteristics which emerged from the independent findings of the psychologists whilst testing the children and also which Goldfarb found in his investigations. He sums up the personalities of his institution children as 'meagre and undifferentiated, passive and apathetic' (Goldfarb, 1949). In the second of his inquiries (Goldfarb, 1943*b*) no fewer than ten of his fifteen institution children showed poor concentration and all of them showed poor school achievement—characteristics which were almost absent from his control group.

The remaining characteristic in which the sanatorium children differ significantly from the controls is that a higher proportion of them are reported to get unduly rough with other children (see Table 8). In addition, they are reported as apt to lose their tempers more frequently than do the controls. This finding, which approaches statistical significance, has not been commented on hitherto because loss of temper was not evaluated as indicating

maladjustment.* If, however, we disregard these evaluations, and consider which children are apt to lose their tempers and which not, it is found that nearly half the sanatorium children do so in comparison with only a quarter of the controls ($\chi^2 = 3.68$ for one degree of freedom; P is at 0.06). It seems fairly certain therefore that in the school setting a larger proportion of the sanatorium children than the controls is prone to roughness and temper. As will be described in Part IV the parents of a number of them also complained that their children had violent tempers, using such words to describe them as 'terrible', 'terrific' and 'wicked'. Goldfarb (1943*a, b*) also found violence and hostility to characterize his institution children; a comparison of the incidences of these characteristics in the sanatorium sample and Goldfarb's samples follows later.

The data regarding the comparative incidence of delinquency in the sanatorium and control groups are inconclusive. Of the children on whom reliable reports are available no sanatorium child is said to truant whilst four controls do. On the other hand, one

* In item 19 of the report form the statement 'I have never seen him lose his temper with other children' was evaluated zero, whilst 'He loses his temper with them now and again' was evaluated plus on the grounds that a normal child should be able to express his aggression.

sanatorium child is said to pilfer while no controls do. There is reason to believe that these items were not checked accurately in all cases by the teachers, and in some cases such information may have been suppressed; as previously mentioned, at least one child was said to pilfer who did not have this item checked on his form. It also transpired later when information from home was available that several of the sanatorium children truanted.

Interrelation of data from teachers and psychologists

The comparisons between the sanatorium and control children, on the basis of the data independently obtained from psychologists and teachers, have thus shown certain differences of the kinds expected between the two groups. As we have seen, however, there are a number of deficiencies in both sets of data: it is therefore of some importance that there is a positive and significant correlation to be found between them. Not only do both sets of data point to a similar type of deviation from the norm, but there is a clear tendency for the same children to be picked upon as showing the deviation; those who are assessed as failing to respond adequately in the test situation are in most cases the same children as those reported by the teachers to show such characteristics as attention-wandering and 'day-dreaming'.

This is shown in Table 9. Tables were first prepared showing the relation of the children's behaviour in the test situation to the entries on the teacher's report form in respect of each of four relevant items: diffidence and apathy in competing, attention wandering, not knowing

what to do unless told, and 'day-dreaming'. The sample used comprised all the available children, sanatorium and control groups combined ($N=76$). Contingency coefficients and tests of significance of agreement were then calculated and are presented in the table. (In each comparison children placed in groups P and Q in regard to behaviour in the test situation and those placed in groups R and S were combined.) The fact that teachers and psychologists, working independently, have tended to single out the same children as having certain difficulties strengthens our confidence in the validity of both sets of data and in the results of the comparisons for which they have been used.

Discussion

The analysis of the data thus makes it reasonably certain that there is a difference in personality functioning of the children in the two groups. Though these differences are not large, it must be remembered that the instruments used were crude and also that the control group was not a group of children selected for never having been separated, but a group of class-mates, matched for age and sex, and random in regard to separation. It is likely therefore that certain members of the control group had experienced separation, and it is at least possible that certain of the rather numerous control children reported to be emotionally disturbed had been affected by separation experiences. It is therefore not unlikely that, had more sensitive instruments been used and had the control group excluded all children who had been separated, a greater difference between the two groups would have been found.

Table 9. *Interrelation of items on teacher's report form and behaviour in test situation*

Item on teacher's report form	Contingency coefficient	χ^2	P lies between
Diffidence or apathy in competing	0.20	3.32	0.10 and 0.05
Attention wandering	0.27	5.77	0.02 and 0.01
Not knowing what to do unless told	0.27	5.97	0.02 and 0.01
'Day-dreaming'	0.34	9.98	0.01 and 0.001

Even so it does not follow that either the differences which were found or any larger differences which might have been found by improved techniques are necessarily due to the sanatorium children having experienced separation. Not only had these children been ill and confined in cots for many months but in many cases their parents had been ill with tuberculosis, some had died and there was much disruption and anxiety in the families. It cannot be doubted that many of the children were disturbed by these other experiences, and therefore that part of the emotional disturbance found in them is to be attributed to factors other than separation. Unfortunately, as already remarked, it is one of the inherent defects of the follow-up method that in any one investigation there is no means of knowing precisely to what antecedents the differences found between groups are to be attributed (Ainsworth & Bowlby, 1954), and this inevitably applies to the present investigation. In this case, in addition to the numerous studies pointing to this direction, the main grounds for attributing part of the differences found to separation are that these differences are similar in nature to those found by Goldfarb, despite his sample of separated children having had, apart from separation, other experiences of a kind quite different from those of the sanatorium children—they were in an institution not a hospital, they were healthy not sick, they were in reasonably good foster-homes not families disturbed by illness. The common experience of the two groups was that of having suffered a major disruption in their relations with a mother-figure in their early years, and it is largely on these grounds that it is concluded that part at least of the personality disturbances from which both groups suffered were due to this common experience. Each investigation has shown that in comparison to control groups separated children are (i) less able to respond to a test situation, (ii) more given to 'day-dreaming' and lack of concentration and (iii) more given to roughness and hostility.

It will be recalled, however, that, though

similarities between the separated children in the two inquiries were anticipated, differences were also expected. On the one hand the sanatorium children were expected, like Bowlby's affectionless thieves, to be less intellectually retarded and less impoverished in personality than the children in Goldfarb's samples, on the other it was thought that they might be more given to ambivalent and anti-social behaviour. The expectation in regard to intellectual functioning is, of course, borne out. That in regard to personality is more difficult to assess, since, owing to different methods having been used in the investigations, strict comparisons between the two samples are impossible. The more detailed qualitative data obtained from interviews with parents, and which are reported more fully in Part IV, make it certain, however, that a larger proportion of Goldfarb's than of the sanatorium children were damaged to a point where libidinal relations were virtually impossible for them. Thus thirteen of the fifteen institution children in Goldfarb's main inquiry (Goldfarb, 1943b) were described by case-workers who knew them well as 'removed, withdrawn and cold', whereas only a few of the sanatorium children could be so described—perhaps six in all. Of the remainder about one-quarter are characterized by an excessive demand for their mothers' affection and approval and another quarter by attitudes to their mothers of ambivalence and hostility, conditions which are much less serious than that of total withdrawal. These differences are thus in keeping with expectations.

Where previous expectations seem to have proved most wrong is in respect of the sanatorium children's capacity to make friends. Not only is no disability in this respect reported by teachers, but, more important because probably more reliable, at least half are reported by their parents to mix reasonably well and to make friends readily—a finding which is the obverse of the fact that very few are delinquent. It is only a minority whose capacity for friendship is reported as seriously impaired; about a dozen are said by their parents not to make

friends, some others have quarrelsome friendships, and one or two are stated to be friends only with other rough children. The validity of these favourable reports, however, is difficult to assess. In certain cases, it is well known, a basic and serious disability in making discriminating object relationships is masked by a superficial camaraderie; thus some 'good-mixers' are found in reality to make nothing but casual and undiscriminating relationships. It is at least possible that some of the sanatorium children reported as making friends readily fall into this category. This suspicion is supported by the finding that of seven other children who were in the same sanatorium in their early years and who have subsequently been followed up in far greater detail and with the use of projective techniques, only two are able to make friends reasonably well; two others make friends only with younger children whom they dominate; and the remaining three make a variety of casual and undiscriminating relationships. In a matter of such importance and of such complexity it will be unwise to rely on the findings of any but the most careful inquiries, a category into which the present project does not fall. Meanwhile it must be noted that, so far as they go, the findings of the present inquiry cast much doubt on the conclusion which had been drawn from some of the early studies that *most* children who have experienced a prolonged separation are unable to make friends. Such doubts have already been expressed by Beres & Obers (1949) and have been emphasized more recently by Lewis (1954).

RANGE OF PERSONALITIES OF THE SANATORIUM CHILDREN

Nature of data

In order to obtain a better picture of the degree of adjustment and of the range of personality patterns of these school children, who in their early childhood had experienced separation, the data obtained from the sources already discussed was greatly augmented by data obtained from home interviews carried

out by a psychiatric social worker. Full information was sought from the parents on the present personalities and behaviour of the children, as well as historical facts about their past experiences and family backgrounds. The assessment of the children was therefore made on the basis of data from three independent sources: (a) teacher's reports, (b) psychologists' reports, (c) interviews with parents.

Although information on social background obtainable from the chest clinics proved of only limited use, liaison with the clinics provided a valuable basis for arranging the interviews with the parents. Permission was obtained to mention in the introductory letter asking for an interview that both the sanatorium and the local chest clinics were co-operating in the research. This introductory letter further stated briefly the aim of the research, stressing that it was hoped a study of this kind would help towards a better understanding of young children who would have to go into hospital in the future. Where suitable it was further stated that an opportunity to see both father and mother would be welcomed, and evening appointments were offered. In a number of cases no reply was received to the first letter. If a second letter still did not produce a reply, the P.S.W. wrote stating that she would be in the neighbourhood on a certain date and unless she heard that a visit at that time was inconvenient she would call to discuss the research. It was found that the lack of reply had no relation to the parents' subsequent willingness to co-operate, just as a prompt reply did not always indicate any real willingness to give full information about the child. In general, however, the P.S.W. was encouraged by the ready willingness to talk that she encountered in most families. It is felt that this is largely a tribute to the sanatorium which most parents remembered with gratitude.

At the beginning of the first interview the P.S.W. again took care to explain the general aims of the research as clearly and simply as possible, though she naturally gave no indication of the underlying hypothesis. She stressed the interest in the subsequent development of

children who had been in hospital when they were small, in their progress at school and at home. Some parents, in spite of the preliminary explanation, held fast to their belief that we were following up their child on behalf of the sanatorium and expressed their appreciation of the fact that the sanatorium was still interested in their child. In some cases, on the contrary, the parents sensed the underlying hypothesis of the research and that there might be a link between any present disturbance and the separation experience. Some of these parents reacted by overstressing either the good behaviour of their child or the fact that hospitalization could have nothing to do with his difficulties, whereas others proceeded to blame the hospitalization for all later troubles.

Only very few families refused altogether to co-operate after the purpose of the research had been discussed. Of the fifty-eight families, only two, involving three children, refused altogether to co-operate; in one case the mother was separated from the father and living with another man; in the other the father had died and the mother was remarried, and it was the stepfather who did not want the mother to co-operate in the research. In two other cases the parents did not want to give histories but invited the field-worker to stay for a cup of tea during which time enough information was obtained to enable her to obtain some picture of the child's present behaviour and characteristics. In these two cases also there were family disturbances: in one family the mother had apparently deserted the father and the children, and in the other the parents were divorced and the mother remarried.

The average number of visits made in order to obtain a history was two. In some cases the parents were seen only once, for instance, where both parents were working and it was difficult to arrange a time for the interview and in cases where the parents were not very co-operative. In others the informants were seen three or even four times. The average length of interviewing time taken to obtain a picture of the child and his history was four to five hours.

Naturally, the material was more complete in some cases than in others, and sometimes the mother was suspected of giving a biased or unreliable account, either glossing over difficulties or exaggerating them. The P.S.W. attempted to assess the reliance which could be placed on the data on the basis of her impression of the informant, on the consistency of information and on her own observations of the home situation.

These data on the personalities of the children were used in two ways: first, to make an estimate of the children in terms of the degree of psychological disturbance which each appears to be showing and, secondly, to classify them into patterns of personality organization.

Degree of adjustment and maladjustment

Three ratings of adjustment were given to each child, each based on data from a different source:

(i) *A school rating* based on the information supplied (a) by the teacher, both in the report form and in personal interview, and (b) by the psychologist in his report. (It should be noted that this rating is in no sense a teacher's rating of the child.)

(ii) *A home rating* based on the information obtained through the interviews with the parents.

(iii) *A final rating* based on the total data available on each child.

These ratings were made by the two research psychologists and the P.S.W. who had interviewed the parents. In assessing the adjustment of each child, attention was paid to the quality of relationships made, particularly those with the mother, father and siblings; the child's interests and activities were considered, together with his progress at school and the relationship of progress to I.Q.; finally, anxieties, symptoms and personality difficulties were noted. To make the assessment of maladjustment as realistic as possible for the three clinically oriented judges a treat-

ment criterion was used: in cases where difficulties were apparent, the significance of these was assessed in terms of the advisability of child guidance treatment and the likelihood of benefit from it.

All the ratings were made on the same five-point scale, the criteria for which are as follows:

1. Child clearly well adjusted. Relationships very satisfactory both at home and outside, and school progress adequate. No evidence of symptoms or personality difficulties. Likely to develop satisfactorily in the future.

2. Child well adjusted on the whole. Relationships satisfactory and school progress adequate. No obvious symptoms or personality difficulties. A satisfactory future development is anticipated though with less confidence than with rating 1.

3. Some obvious problems present, but these are not judged to be severe enough to warrant treatment, nor to interfere markedly with the child's general adjustment. Likelihood that the child will make a tolerably satisfactory adjustment without danger of breakdown, and will cope with his difficulties adequately.

4. Problems present, either difficulties in relationships or symptoms, or usually both, which are severe enough to make treatment advisable. The child should be referred to a child guidance clinic. Without adequate treatment, considerable handicap in the future must be expected.

5. Severely maladjusted, falling into two categories: (a) those children whose difficulties and symptoms, although severe, are likely to be alleviated to some extent by suitable treatment, and (c) those children with severe per-

sonality impairment which is thought to be relatively irreversible and not likely to benefit greatly from treatment.

These ratings of adjustment were made by three judges, each of whom independently assessed the three sets of data on each child and gave her own school, home and final ratings. The three judges then met, and, in conference, arrived at agreed ratings for each child. Thus each child was given three agreed ratings of adjustment: school rating, home rating and final rating. The distribution of these ratings is shown in Table 10. The degree of corre-

Table 10. *Distribution of school, home and final ratings of adjustment*

Type of rating	Degree of adjustment					Totals*
	1	2	3	4	5	
School	1	12	15	20	8	56
Home	2	8	23	17	7	57
Final	0	8	13	28	8	57

* Three cases were excluded because histories from the parents were unobtainable, and one further case was not given a school rating because the school information was too scanty.

spondence between school, home and final ratings is shown in Table 11.

These statistics indicate that the relationship between school and home ratings is not great. Although a complete correspondence between them is not to be expected as it is well known that behaviour at home differs in many cases from that at school, the degree of agreement is unexpectedly low. Examination shows that much of the lack of agreement is due to dis-

Table 11. *Correspondence between school, home and final ratings*

Ratings	Percentage agreement	Contingency coefficient	χ^2	P
School and home	34	0.15	1.16	Between 0.30 and 0.20
School and final	50	0.51	19.90	Less than 0.001
Home and final	74	0.55	25.01	Less than 0.001

crepancies between ratings 3 and 4. The table also shows that in arriving at the final rating rather greater weight was given to home than to school data. In the case of the final ratings the distribution is skewed more to the maladjusted end than are the distributions for either the school or the home ratings; this probably reflects a tendency to lower ratings as additional evidence is taken into account.

It will be noted that, when the total data for each child were taken into account, the majority of the sanatorium children, namely, thirty-six out of fifty-seven or 63 %, were judged to be maladjusted. In considering the meaning of these figures it has to be remembered first that, as clinicians, the assessors set a far more rigorous standard of adjustment than would the layman and, secondly, that in investigations of the general population other clinicians have found a high incidence of psychiatric illness and disability (e.g. Russell Fraser, 1947; Logan & Goldberg, 1953). Even so, the proportion of sanatorium children assessed as maladjusted is high.

A particularly relevant comparison is between the distribution of ratings shown by the sanatorium children and those shown by a cross-section of eight-year-old schoolboys rated on the same scale by clinical assessors using similar data. This was part of an unpublished inquiry undertaken at the Tavistock Clinic in 1948, which sought to investigate all the eight-year-old boys in an elementary school of outer London. Of a total group of forty boys, the parents of thirty-three co-operated. The distribution for the five ratings from best to worst adjusted were: 5, 7, 7, 9, 5, total 33. Thus no less than fourteen of this group of thirty-three ordinary schoolboys were regarded as fairly seriously maladjusted (ratings 4 and 5) and only twelve as well adjusted (ratings 1 and 2). Even so, the distribution of these children between the five ratings is fairly even and contrasts with the distribution of the sanatorium children which is heavily skewed to the maladjusted end of the scale. When this difference is tested statistically it is found to be significant ($\chi^2 = 6.40$ for two

degrees of freedom; P lies between 0.02 and 0.01). On the other hand it seems probable that had Goldfarb's institutionalized children been rated on this scale their distribution would have been skewed even further to the maladjusted end: of the fifteen children discussed in Goldfarb's main inquiry (Goldfarb, 1943b), nine were said to present severe problems, five mild problems and only one was of 'normal general adjustment'; thirteen of them were stated by case workers to be 'removed, withdrawn and cold'. The distribution of ratings in the case of the sanatorium children therefore seems to lie between that of a cross-section of the school population and that of a severely institutionalized group. Nevertheless, whilst noting the tendency for many institutionalized and hospitalized children to show serious maladjustment, the existence of others who come through these experiences apparently unscathed must not be overlooked. Even in Goldfarb's sample one child was judged to be of normal general adjustment, whilst no less than eight of the fifty-seven sanatorium children (14 %) were judged by rigorous standards to be fairly well adjusted.

This finding is in conformity with that of Beres & Obers (1950), the results of whose investigation were published after the present inquiry had begun, and who drew more optimistic conclusions than their predecessors in regard to the development of children who have experienced separation and deprivation in early childhood. They base their conclusions on a follow-up of thirty-eight adolescents and young adults who had spent a prolonged period of early childhood in the same institution as that from which the cases of Goldfarb had been drawn. Whereas Goldfarb had, quite legitimately, emphasized the similarities between the cases, Beres & Obers stress the differences in the clinical pictures. A majority of their cases were disturbed—twenty-eight of the thirty-eight showing signs of 'serious weakness in ego-structure' and three others being mentally retarded—which confirms the general hypothesis regarding the pathogenic effects of these early experiences. On the other

hand, they found several cases in which marked increases in I.Q. had taken place in later childhood and seven cases in which the adjustment at the time of follow-up was deemed to be satisfactory. Their case material suggested to them that some individuals with a history of institutionalization are able later to develop a close and stable relationship with an adult person whether it be foster-parent, case-worker or therapist. Since their sample was biased in favour of cases presenting problems, there is little doubt that had they studied a representative sample they would have found more cases which had developed reasonably favourably. Lewis (1954) emphasized the same point after completing her analysis of the psychiatric findings on 500 children admitted to a reception centre, 204 of whom had experienced separation from their mothers, either permanently or temporarily (over three months), before the age of five years. The separated children are shown to be significantly more disturbed than the 296 children who had not been separated ($\chi^2 = 14.15$ for two degrees of freedom; P is less than 0.001), despite most of the non-separated children having come from extremely disturbed home backgrounds. Nevertheless, 16 % of the separated children 'did not show abnormal behaviour in their childhood', even though some had been brought up in public institutions; this is a percentage almost identical with that shown in the present inquiry. After giving a number of examples of children who had come through their experiences apparently unscathed she calls attention to 'the need to qualify any general indictment of institutional upbringing'.

The results of the present investigation, therefore, taken with those of Goldfarb, of Beres & Obers and of Lewis, make it plain that development following separation and deprivation in early life, whilst very adversely affecting some individuals, affects a minority much less severely. In taking note of this, however, we must be on our guard against making the assumption that all these individuals are wholly unaffected by the experience. It is possible that this is so, but it is equally

possible that some have suffered damage which in the circumstances of examination is not revealed. Such hidden conditions are a commonplace of medicine. They represent one phase in a continuum from damage which is lethal through that which is manifestly crippling to that which is wholly repaired. It is therefore almost certain that, if deprivation causes psychological damage which is manifest in some cases, it will cause damage which is concealed in others. With our present crude equipment for the clinical examination of such cases it is impossible even to guess at the incidence of such concealed damage or whether the cases reported in this and other inquiries as apparently unharmed are in fact so or not. Only research carried out with far more refined methods of investigation than have yet been employed will be capable of answering such questions. Meanwhile we are presented with the fact that outcome unquestionably varies greatly from case to case, which is itself an important conclusion, and one which poses the problem of why outcomes vary in this way. The answer may lie in the diverse ways different individuals respond to similar experiences or, on the other hand, to the experiences undergone by different individuals being different in significant ways, which is very often the case, or to a combination of both factors.

An attempt was made to use the data of the present inquiry to determine whether and to what extent differences in the experiences of individuals might account for the varying outcomes. Elsewhere (Ainsworth & Bowlby, 1954) we have listed some of the very numerous antecedent conditions which are likely to affect outcome, distinguishing between those operative before, during and after the separation experience, and also between those which are intrinsic to the experience, such as age, length of separation, and quality of mother-child relationship, and those which are commonly associated with a separation experience, such as illness and being confined in a cot, both of which occurred in the sanatorium sample. The results of the analysis of data from the present inquiry were inconclusive. Of the many

correlations between antecedent conditions and degree of maladjustment which were calculated, the highest were in regard to the length of separation, the number of separations and the relationships the child was judged to have with his mother and father. However, although these and other correlations were all in the expected direction, none reached a level of statistical significance. These inconclusive results are perhaps not surprising when it is remembered that this study was not originally designed to permit of a systematic and controlled exploration of the relevant antecedent conditions, that these conditions are not independent of each other and that the data are inadequate in many respects. In our previous paper we have discussed the many shortcomings for the elucidation of the problem of differential outcome inherent in data obtained retrospectively, as they have been in this and other follow-ups, and have concluded that systematic observation of the child's responses to the experiences as and when they are occurring is the research strategy most likely to prove fruitful for this purpose.

Patterns of personality

Whilst the ratings of adjustment are concerned with *degree* of psychological disturbance believed present, the classification into personality patterns is concerned with the *form* of personality organization shown by the children. Although no *a priori* classification was adopted and the judges proceeded empirically in their construction of a system, in making it there was agreement that particular attention would be paid to the way the child organized his object relations.

In arriving at the classification three steps were taken. The first, taken whilst the data on each child were being reviewed for purposes of rating his adjustment, was to collect all material on the personality of each child into a personality summary. The second was for each of the three judges independently to sort the personality summaries into whatever groups she thought most appropriate, and the third

for the three judges to compare their groupings and to agree on a basis for classification. At this conference it was noted that most of the children had been grouped together similarly, even though the definitions and boundaries of the groups differed from one judge to another. Working from these groups it was therefore not difficult to agree on a classification; this comprised seven patterns as follows:

Group A. *Conforming*: children who, through good behaviour or achievement or both, are socially acceptable. Some but not all seem unduly concerned with winning the approval of adults by means of this behaviour.

Group B. *Over-dependent*: children who are more dependent on the mother than is normal for their age, showing it by clinging to her or demanding reassurance of her affection and approval. These are divided into two sub-groups: (i) those who do not express hostility, (ii) those who express some measure of hostility to other people, including the mother.

Group C. *Withdrawn and over-dependent*: children who are not only extremely over-dependent in all their relationships but are also unable to mix satisfactorily with other children.

Group D. *Ambivalent*: children who show evidence of both affectionate and strongly hostile feelings towards their mothers and others, and who are not over-dependent.

Group E. *Mother-rejecting*: children who show both a pronounced lack of dependence on the mother and some hostility towards her, with preference for other members of the family.

Group F. *Affectionless*: children who show no apparent dependence on nor affection for the mother and whose relations with other figures are also severely disturbed.

Group G. *Superficial*: children in whom there is little evidence of overt disturbance or difficulty, but whose relationships are suspected to be lacking in warmth and depth though at first glance they may seem satisfactory.

The classification being agreed, the judges independently regrouped the children, assigning each to whichever personality pattern

seemed to be dominant; finally, they met in conference to resolve differences of opinion about cases which had not been unanimously classified. As was to be expected since the groups overlapped, most of these differences were concerned with children who seemed to fall on the boundary between two groups; these were easily resolved. There were, however, six children about whom there was more serious difficulty because they did not fit clearly into any of the seven groups. It was finally decided to add an eighth, unclassified, group rather than try to force them into a group they did not really fit.

Since the criteria for classifying into personality patterns were different from those for classifying into ratings of adjustment, most of the groups contained individuals showing the whole range of ratings from well-adjusted to maladjusted. Table 12 illustrates this relationship:

Table 12. *Relationship between personality patterns and final ratings of adjustment*

Personality patterns	Final ratings of adjustment		Total
	1, 2 and 3	4 and 5	
A Conforming	5	3	8
B Over-dependent	5	8	13
C Withdrawn and over-dependent	0	5	5
D Ambivalent	5	7	12
E Mother-rejecting	1	4	5
F Affectionless	0	3	3
G Superficial	2	3	5
H Unclassified	3	3	6
Total	21	36	57

Although the numbers in each category are small and the differences not significant, it is to be noted that the conforming type of personality pattern contains a higher proportion of better adjusted children than do the other groups, whilst groups C and F are composed exclusively of maladjusted children.

The extent to which several of the groups in this classification overlap is shown by the difficulty in finding names for them which are mutually exclusive. Thus 'over-dependence' needed to be used in the names of two groups

and 'mother-rejecting' really applies to group F as well as to group E. Further consideration, in fact, makes it clear that there are three major classes of case. The first class, comprising groups A, B and C and numbering twenty-six, contains children all of whom showed strong positive feelings towards their mothers, the difference between the groups depending on the confidence the children had in these relationships. The second class, comprising group D and numbering twelve, contains children who were markedly ambivalent in their relationships. The third class, comprising groups E, F and G and numbering thirteen, contains children, the loving components of whose relationships were little if at all expressed whilst hostile components or indifference were openly displayed.

Some details of the groups follow:

Group A consists of eight children who were classified as *Conforming*. Both at home and at

school they are described as good children, obedient and amenable. They have friendly relationships with parents and others, with little evidence of hostility in any of their relationships. Whilst such a personality pattern is often compatible with mental health, it is sometimes the expression of an excessive need for gaining the approval of other people and based on deep anxiety. This is the case with some of these children. Two are doing well at school where their scholastic progress is good and where they are popular and leaders.

Although both tend to be slightly tense and over-serious, and there is a compulsive flavour about the achievement of one of them, both have made an apparently successful adjustment and were finally rated 2 on the degree of adjustment scale. The remaining six, whilst very anxious to please, are not all particularly successful in their achievements. Two of them are highly dependent on their mothers and thus show some of the characteristics of group B, whilst in others the conforming behaviour appeared to be at the expense of spontaneity and to be highly charged with anxiety. The final ratings of adjustment varied from 2 to 4.

Group B comprises thirteen children who were classified as *Over-dependent*. These children were grouped together because they were characterized by a marked need for reassurance of their mothers' love, manifested chiefly by demands for affection, attention and approval from her and sometimes expressed by a tendency to cling to her. In some cases, though not all, they are overtly affectionate towards her. They tend also to have friendly relationships with the father, where he is alive, and to other members of the family. However, while some get on well also with contemporaries, others have difficulty in mixing outside the family. They were subdivided according to whether there is absence or presence of hostility in their relationships:

(i) seven children show no hostility in their relationships to the mother, nor in their relationships to contemporaries. Some of them tend to be conforming and good, like the children in group A, but this is shown more specifically in relation to mother together with a particular need for her approval and affection. Four of these non-aggressive children are active and have satisfactory relationships outside the home—being popular at school and making good educational progress—while the other three tend to be poorly adjusted outside the home, not mixing well and getting on badly at school. The final ratings of adjustment varied from 2 to 4.

(ii) The remaining six children, although

just as dependent on the mother, tend to have outbursts of anger. Unlike the children in groups D and E, this is not specifically directed against the mother. It expresses itself more generally in the form of tempers or obstinacy at home, and being quarrelsome and bossy in relationships with other children. In spite of this, however, all but two are popular and have friends. Four show jealousy of their mother's attention to siblings. All are active without being over-active but five are backward at school. Although they show a need for their mother's approval and also that of teachers, towards whom they are helpful, they are not as conforming as the children in group A and in group B (i). No fewer than five of this sub-group were judged maladjusted and were finally rated 4—the other was rated 3.

Group C comprises five children who are described as *Withdrawn and Over-dependent*. They have been grouped together because of the very marked degree of insecurity and over-dependence which dominates the picture and which, unlike the children in group B, is generalized to include the father, where he is alive, and others. This dependence is permeated with anxiety, particularly in relation to the mother from whom continual reassurance of love is needed. There is a marked desire for physical contact, demonstrative affection and cuddling, which is extended in three cases to other members of the family and even to strangers. They are characterized by timid, non-aggressive behaviour both at home and in their relationships with other children. Two, however, show a certain amount of obstinacy towards mother. They are all diffident and isolated from their contemporaries, in two cases without any friends at all, although there is attachment to siblings. They are all poorly adjusted at school, showing many of the signs of maladjustment which distinguished the sanatorium children from the controls. They are inattentive, unable to concentrate, 'daydreamy' and incapable of independent work. They are all backward, making poor progress in relation to their intelligence quotients. In general, this is a group of passive, timid, withdrawn children;

in the case of the boys there is a suggestion of a homosexual type of adjustment. All were considered maladjusted and rated 4 or 5.

The twenty-six children in groups A, B and C all show strong positive feelings towards their mothers. Although some, mostly in group A, have a measure of confidence in their relationships and seem fairly well adjusted, others, particularly those in group C, are intensely anxious and clinging. Others again show ambivalence in their relationship and so form a transitional group to group D, which provides the second main class.

Group D is a rather miscellaneous group of twelve children with *Ambivalent* relationships. In relation to mother, they are consistently neither over-dependent nor rejecting; instead, there is evidence of a positive affectionate relationship to her, but this is accompanied by considerable hostility expressed in the form of tempers or obstinacy. The group can be subdivided into: (i) five children whose adjustment outside the home is fairly satisfactory, with good progress at school and fairly adequate, though somewhat aggressive, relationships with other children; and (ii) the remaining seven whose adjustment outside the home is poor. They are backward at school and tend either to withdraw from their age group relationships or to be spiteful and difficult. The children in this group vary considerably in degree of adjustment. More than half were considered maladjusted and were rated 4 or 5; the rest were rated 3 with the exception of one rated 2.

The thirteen children in groups E, F, and G make up the third main class of case; loving components in their relationships to their mothers are little if at all expressed, whilst hostile components or indifference are frequently prominent. Many are said to lack any feeling of attachment to their mothers and to get on well with strangers, known clinically as an ominous combination of features.

In *group E* there are five children (all boys) who are characterized as *Mother-rejecting*. They are described as being 'independent' of mother, not at all affectionate towards her, and

disobedient. Their relationships with father and siblings, however, are rather better. Some flare up into tempers when frustrated, others are defiant or obstinate. All are restless and over-active with evidence of aggression in either an overt or a submerged form. Their relationships with other children vary, some getting on quite well while others get on badly, but all seem unduly aggressive. Two are progressing well at school while the other three are not. The common feature of these five children is that their adjustment seems worst in relation to their mothers, suggesting serious conflict in their feeling for her, and a tendency to adopt the manic defence. Four were considered maladjusted and rated 4, the other was rated 3.

Group F contains three children who were judged to be *Affectionless*, a personality pattern which is similar to group E though feelings of affection are even more deeply repressed. They show no feeling for their mothers and all their other relationships are severely disturbed, their behaviour to other children being aggressive and bullying. Like those in group G, however, they get on easily with strangers. There is marked inability to tolerate frustration, together with serious outbursts of temper. School progress is poor. All three are suspected of pilfering and two also truant. In addition to these shared characteristics, all three have a number of individual symptoms of quite a serious kind. One, aged nine, seems paranoid and suspicious, feeling his parents are against him whenever he is reproved. He torments his younger sister, is a bully and a bad loser, not able to keep friends for long. He is described as independent and uncommunicative and tends to fantasy. He has a passion for lighting matches, used to chew his collars and has a phobia of things being over his face. The second, aged nine, also bullies his siblings and is said to consider himself a special case. He had suffered from asthma and had soiled at school till recently. The third, aged eight, suffers from food fads and fears and is preoccupied with her own health. She is babyish for her age and inclined to excessive fantasy. All these three children were rated 5.

The five children in *Group G* are placed together because their relationships are suspected of being *Superficial*, lacking in warmth and depth. At home they are described as being 'independent of mother', and yet on good terms with her and the rest of the family. They are little trouble and with one exception obedient and easy to manage, without any evidence of hostility. Their relationships with other children are more disturbed, however. Three manifest an over-excitable, spiteful, 'show-off' pattern, while the remaining two have no particular friends. In four cases, the mothers seem to have little idea of the difficulties encountered in their children's relationships outside the home, and contrary to most other cases the picture painted by the teacher is much worse than that given by the mother. Four of them are not infrequently in difficulties with their teachers and get on badly at school. They are all active children, though not overactive. They hardly ever cry, bearing pain without complaint, and are insensitive to criticism; one of them, a girl, was described by a nurse when in hospital at the age of six as being 'tough as nails'. Three seem to enjoy the dramatic and like to have an audience. One is reported to pilfer at school and to be untruthful and another is also said to be untruthful. Like those in group F all get on easily with strangers. The final ratings of adjustment for these children varied from 2 to 5, but a characteristic in common is that all the ratings were queried, as the assessors felt a lack of confidence in the adequacy of evidence. This was linked with the feeling that the adjustment of these children was superficial and disguised much disturbance below the surface, a condition which is characteristic of many psychopathic personalities.

Group H consists of six children who were *Not Classifiable* in any of the previous seven groups, nor could they be grouped together as their personalities were dissimilar. Three were in this group because the information about them was too scanty to give an adequate personality picture; in each case the mother was dead and the information was given by

father or foster-mother. The personality pictures of the other three children were full enough, but they did not fit sufficiently well into any of the other groups. Two had patterns somewhat similar to that of children in group A but did not seem to be sufficiently conforming to be included there. The third might perhaps have been included in group D (ambivalent) but for his general 'toned-down' behaviour, which seemed to have neither a sufficient positive nor negative component to be called ambivalent. The final ratings of adjustment of these children ranged from 2 to 4.

This brief review of the fifty-seven children makes it plain that there is an extremely wide range of personality organization represented, from a couple of children in group A who were popular leaders at school to three in group F and one or two in group G who were near-delinquent. How, it may be asked, can such extraordinarily diverse outcomes all be related to the experience of separation? Though it is not our contention that all the varied features noted can be so related, it is our view that conditions as diametrically opposite to one another as extreme over-dependence and apparent absence of dependency can both be promoted by an experience of this kind. A brief account of how we conceive of this follows.

A dynamic interpretation of the personality patterns

Before attempting this interpretation it must be emphasized that none of the personality patterns described is confined to children who have experienced separation; examples of such patterns are not infrequent in the general population and are confidently believed by most child psychiatrists to be produced by causes other than separation. Thus, for example, conformity patterns are found frequently in children who for any reason have an excessive sense of guilt, whilst mother-rejecting patterns are often found in children who have themselves been rejected. Neverthe-

less, it seems useful to consider the way in which these personality patterns *may* be related to the separation experience, since it is clear that many of the forms which these children's object relations take are typical of those which immediately follow an experience of this kind. This will be evident from the following description of such responses, which is based on observations of children currently undergoing separation, some of whom have later been followed through to their homes to observe their response to their mothers and families on reunion (Robertson, 1953; Bowlby, 1953; Bowlby, 1954).

It is characteristic of young children separated from their mothers between the ages of one and four years to fret at first, either calling for their mothers if they are old enough to communicate their wishes verbally, or making it clear through their behaviour that they are in a state of distress. Nevertheless, if the mother visits the child early in the separation period he does not respond with unmitigated joy, as perhaps might be expected from the longing for the mother expressed in fretting, but instead mingle clinging with crying and with various forms of rejecting behaviour, such as turning away and pushing his mother away. Often he shows considerable resentment towards his mother, while at the same time clinging to her and being very unwilling to let her go at the end of the visit. Sometimes he makes it plain that he is angry with her for having abandoned him. Characteristically, if the separation continues long enough, he ceases fretting and becomes bright and cheerful, apparently happy and 'well-adjusted' to his new surroundings. He seems to have forgotten his parents and no longer asks for them; indeed, he may look uncomprehending if 'mummy' and 'daddy' are mentioned. Both his desire to be with his mother and his distress and resentment at having been separated from her seem to have disappeared. If his mother visits for the first time long after he has reached this state he may not recognize her; if she has been visiting at fairly regular intervals, there is no difficulty in recognition, but he is no longer upset, even

when she leaves at the end of a visit. He expresses no anger towards her nor does he cling to her; commonly he is indifferent to her, showing neither more affection towards her nor need for affection from her than he does with anyone else.

The way young children behave when they return home appears to depend in high degree on the kind of adjustment they have made during separation; those who have fretted until the end of separation behave on return differently from those who have 'settled' and become bright and cheerful. It is common for the child who has retained an orientation towards his mother and who has fretted until the end of separation to respond to reunion with a greatly increased demand for his mother; he becomes excessively attached* to her and clings to her as though she might disappear again at any moment. In contrast, the child who has become cheerful and 'settled' at the end of his separation, which seems to occur fairly frequently after a complete separation lasting many months, commonly lacks a normal attachment to his mother when he returns home and appears untroubled by her comings and goings. There is good reason to believe that this absence of attachment (or dependence) is due to a repression of his need for his mother. Although some children seem to continue indefinitely in this state of pathological detachment, others, seemingly those who have had shorter or less traumatic separations, suddenly and after varying periods of time become excessively attached to her

* Elsewhere (Ainsworth & Bowlby, 1954) we have discussed the problem of selecting the most suitable term to describe the young child's relation to his mother and there decided in favour of the common clinical terms 'dependent' and 'dependency', both of which have been used in this paper. The disadvantage of this terminology, however, is that it may imply that the young child's relation to his mother is a secondary result of her being the provider of food, warmth, etc. Since it seems equally likely that the relationship is primary we now prefer the more neutral terms 'attached' and 'attachment'.

again.* It is on this sudden manifestation of excessive attachment and dependence after an apparent lack of attachment that the hypothesis is based that the child's need for his mother does not disappear when he 'settles in' and 'adjusts' to separation but is repressed. Such an hypothesis explains the fact that in the early reunion period children who have been separated tend to fall into one or other of two contrasting groups—those who are excessively attached and those who express no need for attachment; there is a conspicuous dearth of children with the amount of attachment normally displayed by the pre-school child. (For the discussion of the concept of repression in this context see Bowlby (1954), p. 73.)

A similar dichotomy appears with respect to hostility (although here the picture is more complex and will be simplified for the purposes of the present discussion). Probably a majority of children after having been separated are very much more aggressive than the ordinary non-separated child of equivalent age. Some focus this aggression on the mother, responding to her at the time of reunion with overt rejection, pushing her away and repulsing her affectionate advances; others express this increased hostility more diffusely, chiefly in violent temper tantrums which are easily evoked by the most minor frustrations. On the other hand, a few children after a brief phase of being fractious, obstinate and easily incited to anger become markedly non-aggressive, and a few others show a complete absence of overt aggression from the beginning. Here again there is a dichotomy, this time between greater-than-normal hostility and unusual absence of hostility. In general, the children who continue to repress their need for attachment manifest the most marked hostility, whilst those few who have an apparent absence of hostility come from the group with excessive need for attachment. It seems likely that the latter

experience their own hostility as a threat to the positive relation and so control or repress it.

To summarize, a study of children currently undergoing these experiences points towards two sets of responses being characteristic of the behaviour after reunion: (a) the child is likely either to manifest excessive attachment to the mother or a marked lack of attachment; (b) he is likely either to be hostile and aggressive beyond the normal for a pre-school child or to express no hostility. These responses can, of course, follow many other experiences of frustration in the child's relation with his mother, though clinical experience suggests that neither the intense clinging nor the extreme repression of the need for the mother are often found in as strong measure with other children as they are with children who have recently experienced separation.

The similarity of these responses to those which have been found to characterize many of the sanatorium children will at once be evident—the excessive dependence of many children and the unusual absence of dependence in others, the excessive aggression of certain children and the timid inability to express hostility shown by others. It is our belief that these resemblances are more than superficial and that the personality functioning of many of those sanatorium children who are found to be maladjusted is to be understood as representing in some degree a persistence into later childhood of pathological responses having their origin during and immediately following the separation experience. The hypothesis is therefore advanced that certain of these children, notably those in groups B and C who are markedly over-dependent often with an inhibition of aggression, are to be regarded as having developed the over-dependent type of response following separation and to have become in some degree fixated in it; whilst others, notably those in groups E and F who are mother-rejecting often with much aggression, are to be regarded as having repressed their need for attachment to their mother during separation and to have become relatively fixated in that response. Such an hypothesis

* Length of separation appears to play a part in determining both the onset of repression and its persistence. It is clear, however, that other factors play a large part also, notably the mother's treatment of her child after his return.

accounts for the paradoxical finding that the personality patterns of children who have experienced long separation tend to fall into one or other of these two opposite classes.

It can also account for the relative frequencies of these two classes of response. Since a persistent repression of the need for attachment is the extreme response to separation and is therefore less common, whilst over-dependence is less extreme and therefore more common, it is to be expected that repression of dependence will characterize fewer cases than will over-dependence. This is what has been found in this inquiry; there are roughly twice as many children showing an over-dependent type of response as those showing strong repression of dependence.

Naturally there are almost infinite individual variations within each of these typical patterns. If the hypothesis advanced here is correct these are dependent in some degree on the form the response took during and immediately after separation, which is itself dependent in some measure on the precise experience the child had whilst away. On the other hand, it is evident that all the variance cannot be due to such causes alone; at least three others almost certainly play a part: (a) inherited individual variations in responsiveness to a love object and in the capacity to tolerate frustration which, although not yet demonstrated, are likely to exist; (b) modifications in such responsiveness and capacity taking place in early life prior to separation; and (c) the experiences the child has subsequent to separation and in particular his experiences in relation to his parents. It is our belief that each of these conditions, which are independent of the experience of separation, is almost certainly playing a major part in accounting for the variance, a belief which is in no way incompatible with the hypothesis that the separation experience is playing a major part also.

CONCLUSIONS

In the comparison of the sanatorium children with the control group two tendencies emerged which were found significantly more frequently

in the sanatorium children—the tendencies (a) to withdraw into daydreams and to lack initiative and concentration and (b) to be rough and given to tempers. The first of these emerged from the independent report of the teachers and the psychologists; the second emerged from the reports of the teachers (the psychologists having no opportunity to observe it).

Since it is possible that these differences are due to other variations in the experiences of the children in the two samples, it cannot be firmly concluded that the greater incidence of these tendencies in the sanatorium group is due to their having experienced prolonged maternal deprivation during separation. Nevertheless, the fact that Goldfarb found both tendencies significantly more frequently in his institution children than in his controls and that there are many other studies pointing in the same direction strengthens the belief that separation is indeed a main cause of the present findings.

Although there are many similarities between the findings in the sanatorium children and in the institution children studied by Goldfarb, there are also differences. It seems probable that the overall incidence of maladjustment is higher in Goldfarb's sample than in the sanatorium one. As regards intelligence level, whereas Goldfarb found a very high incidence of intellectual retardation in his institution children, group retardations were not present though there was some evidence suggestive of a lowered I.Q. in those children who had entered hospital before their second birthday. These differences are in the direction to be expected, since the children of Goldfarb's sample had experienced privation at an earlier age and for a longer period than had any of the children of the sanatorium sample.

In certain respects, therefore, the findings are in accordance with the hypotheses originally advanced. On the other hand, the total incidence of disability in the sanatorium children is lower than had been anticipated. Although thirty-six, or 63 %, were judged to be maladjusted, there were eight, or 14 %, who

were judged by rigorous standards to be fairly well adjusted. Furthermore, of the thirty-six maladjusted children, only a minority (eight) were thought to be very severely maladjusted. In particular, more of the sanatorium children than had been expected were reported as able to make friends, and fewer appeared to show the severe disturbances in object relations which underlie persistent delinquency. Perhaps the principal value of this investigation has been to display the great heterogeneity of personality organization which is consistent with having undergone a prolonged separation experience starting before the fourth birthday. The patterns of personality found range from children who are noted for their good behaviour to those who are near-delinquent, from children who are exceedingly over-dependent on their mothers to those who show no positive feeling for their mothers and appear to have repressed all feeling of love and dependence.

In the past, certain workers, notably Bowlby, Bender, Goldfarb and Spitz, have tended to underline both the similarities in the severely deprived children they have studied and the seriousness of the psychological damage for which they believe deprivation due to separation to be responsible. More recently others, notably Beres & Obers and Lewis, whilst confirming that experience of separations are often pathogenic, have emphasized the very varied clinical pictures presented by individuals who have had these experiences and the fact that a few appear to come through almost unscathed. In some of these cases, it is here argued damage of a hidden kind is probably present, although there may well be others where this is not so. Though this is a vital issue, it is one which cannot be settled without research of a far more refined character than has yet been done. Meanwhile it is clear that some of the former group of workers, including the present senior author, in their desire to call attention to dangers which can often be avoided have on occasion overstated their case. In particular, statements implying that children who are brought up in institutions

or who suffer other forms of serious privation and deprivation in early life *commonly* develop psychopathic or affectionless characters (e.g. Bowlby, 1944) are seen to be mistaken. The present investigation confirms the findings of Beres & Obers and Lewis. Outcome is immensely varied, and of those who are damaged only a small minority develop those very serious disabilities of personality which first drew attention to the pathogenic nature of the experience.

Though we may be relieved that this is so, there are no grounds for complacency. The evidence that experiences of privation and deprivation arising from separation in the early years can lead to psychopathic personality development in certain cases and in others to personalities burdened by increased libidinal craving and aggressive impulses is not controverted, even though the proportions so affected may be lower than some at first thought. The disturbances are serious and affect a far from negligible proportion of children. In so far as measures can be taken to prevent them it remains urgent they be taken.

This investigation was not planned to elucidate the factors which account for the variation in outcome, and has in fact cast no light on this aspect of the problem. Important area though this is, the history of medicine should warn us not to expect to solve its problems quickly. Even to-day, after a century of research into infectious illness, there is far from complete understanding of why the responses of different individuals to the same infective agent are commonly so varied.

Experience in undertaking this investigation has led us to reflect on the uses and limitations of the retrospective follow-up method of research in the study of mother-child separation. These have been discussed at some length in another paper (Ainsworth & Bowlby, 1954), where we have emphasized certain serious limitations of the method, especially that it is concerned with the effects of events which have taken place some years earlier and about which it is impossible to obtain accurate information, and that it gives no opportunity

for a systematic study of the psychological processes set in train by the experience. For these reasons we concluded that the retrospective follow-up had only very limited use as a method for future research in this field, and that new projects would be well advised to utilize the current study approach.

SUMMARY

1. In order to test and refine hypotheses regarding the ill-effects on personality development of separation from the mother in early childhood, a follow-up was planned of children who had experienced a separation in their early years which, although long, was of a kind likely to be less traumatic than the experiences of children studied by Goldfarb.

2. The sample chosen was a group of children who, because they had had tuberculosis, had been patients in a sanatorium for periods of months or years starting before their fourth birthday and who were at the time of the inquiry living at home and attending school. The total sample was sixty, though in most areas of the investigation the number available for study was smaller than this. The age at time of follow-up ranged from 6.10 to 13.7 years.

3. For purposes of comparison in respect of I.Q. and behaviour in school a control group was selected of children matched for age and sex with the sanatorium children and attending the same school class; each sanatorium child was matched with three controls. In respect of separation the controls are a random group.

4. The data used for the comparison of the sanatorium children and the controls are derived from two independent sources—a teacher's report form and a psychologist's report. The information requested on the form was limited to concrete items of behaviour of which the teacher might be expected to have first-hand knowledge. In reporting, both teachers and psychologists knew which child was which.

5. Although there was a tendency for more of the sanatorium children than the controls to

be in the lower range of intelligence, no difference reaching statistical significance was found in respect of I.Q. between the two groups. The mean I.Q. of the sanatorium children was 107 ± 22.8 ; this differentiates them sharply from the institution children studied by Goldfarb, whose mean I.Q. was 72.4. There was some evidence suggesting that entry to hospital before the second birthday affects later I.Q. adversely.

6. A classification, based on the psychologists' reports, of the children's behaviour in the test situation was made by psychologists ignorant of which child was which. A comparison showed that fewer of the sanatorium children than of the controls were able to respond adequately in the test situation. Using the χ^2 method, this difference is shown to lie at a level of confidence between 0.05 and 0.02.

7. When the two groups of children were compared in respect of each item of the teachers' report form, virtually all the differences found were adverse to the sanatorium group. However, when tested by the χ^2 technique, none reached a level of statistical significance.

8. The reports of teachers were then divided on the basis of explicit criteria into those in which more and those in which less confidence could be placed. When the same comparisons were made using only those reports judged to be the more reliable, clear differences between the two groups of children appeared. In eleven of twenty-eight items of the report form a larger proportion of sanatorium children than of the controls was given a marking indicating maladjustment; in the remaining seventeen items differences were negligible. In five of the eleven items which showed a difference the level of confidence was better than 0.05.

9. When each child is scored for the presence in his report of those statements indicating maladjustment which occur within these five items, a comparison of the distribution of markings shows the sanatorium children to be significantly less well adjusted than the controls. If the comparison is confined to the

children with reliable reports P is less than 0.001; when all children are included P is 0.01.

10. Qualitatively the differences between the two groups of children are found to be that the sanatorium children are inclined towards (a) withdrawal and apathy and (b) roughness and tempers, both of which tendencies had been found by Goldfarb.

11. The differences found are not as great as had been anticipated; in particular, few of the sanatorium children appear to be delinquent, and at least half are reported to make friends reasonably well.

12. When the findings on the sanatorium children are compared with those on Goldfarb's institution children the impression is gained that more of the latter group are disturbed and that their disturbances are more serious, which is in keeping with expectations.

13. To permit of a more detailed review of the personalities of the sanatorium children a psychiatric social worker interviewed their parents. On the basis of these data, considered along with those obtained from teachers and psychologists, ratings were made of the degree of personality maladjustment shown by the children. Of the fifty-seven rated, thirty-six or 63% were judged to be maladjusted; of the balance, eight seemed well-adjusted and thirteen adjusted but with minor problems. This distribution is in conformity with those found by Beres & Obers and by Lewis. No light is thrown on the reasons for this great variation in outcome.

14. On the basis of the same data, the sanatorium children were classified by form of personality organization. They fell into three major classes: the first, numbering twenty-six, contained children all of whom showed strong positive feelings towards their mothers and included many children who were pathologically over-dependent; the second class, numbering twelve, contained children who were markedly ambivalent in their relationships; the third, numbering thirteen, contained children the loving components of whose relationships were little if at all expressed, whilst hostile

components or indifference were openly displayed. Six children could not be classified.

15. Despite the diversity, even contradictoriness, of outcomes, reasons are given why it is reasonable to advance the hypothesis that the experience of separation may account in part for these different outcomes. Their similarity to certain responses to be observed during and soon after a separation experience is noted, in particular the tendency of the child to show either a much increased demand for his mother or a repression of this drive. It is emphasized, however, that, even if some of the variance in outcome is probably due to variations of response during and after separation, much of it must be attributed to other antecedents, in particular the child's experience with his mother before and after separation.

16. It is concluded that some of the workers who first drew attention to the dangers of maternal deprivation resulting from separation have tended on occasion to overstate their case. In particular, statements implying that children who experience institutionalization and similar forms of severe privation and deprivation in early life *commonly* develop psychopathic or affectionless characters are incorrect. The results of the present study, however, give no grounds for complacency.

17. It is also concluded that the disadvantages of the retrospective follow-up method are such that it is likely to have only limited use as a method for future research in this field.

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APPENDIX

A copy of Parts I and II of the teacher's report form is given here. In the right-hand margin in place of the 'boxes' for the teacher to check the appropriate statement, there have been inserted four columns:

Column 1. Evaluation of statement in terms of its indication of adjustment-maladjustment: + indicates adjustment, - indicates maladjustment, 0 indicates neither. All items in Part II were evaluated -.

Column 2. Number of sanatorium children checked for each item.

Column 3. Number of sanatorium children multiplied by three to facilitate comparisons with controls.

Column 4. Number of control children checked for each item.

After each item in which there is a discernible trend, the χ^2 has been given, in all cases taking statements evaluated as + and 0 against those evaluated -. Size of P is added (see Table 6 in text).

TEACHER'S REPORT FORM

PART I

Below there will be found twenty-two groups of statements. Place a tick in the box opposite the statement in each group which seems to fit the child most closely, leaving the adjoining boxes blank. Where more than one statement in a group might apply, decide which comes nearer the mark and tick that one only. If none of the statements in a group seem applicable, please leave the boxes unmarked and make your comments in Part VI (a).

	Evalu- ation	Sana- torium	Sanatorium x 3	Control
1. He is rather slow to pick up what he is taught	0	21	63	38
He picks things up about as quickly as the average child	0	10	30	46
He is unusually quick in the uptake	0	1	3	12
Omissions		0	0	0
2. He makes friends pretty easily with other children	0	22	66	76
He makes friends, but takes a long time to do so	+	6	18	16
He seems to want to make friends, but not to be able to do so	-	3	9	1
He does not seem to want to make friends	-	1	3	3
Omissions		0	0	0
$\chi^2 = 3.02$; P lies between 0.10 and 0.05				
3. He fusses rather a lot if he gets a knock	-	6	18	18
He sometimes fusses but soon gets over it	+	12	36	32
He takes no notice of such occurrences	-	13	39	45
Omissions		1	3	1
4. He is frequently spiteful to other children	-	1	3	4
He is spiteful on occasion	0	7	21	18
I have never noticed any such behaviour	+	23	69	74
Omissions		1	3	0
5. His school work is exceptionally tidy	0	2	6	21
It is as tidy as I would expect for his age	+	20	60	54
It is very untidy	0	9	27	19
Omissions		1	3	2
6. He is a somewhat apathetic boy	-	10	30	26
He is quite lively and responsive	+	16	48	60
He is inclined to become over-excitable	-	6	18	6
Omissions		0	0	4
$\chi^2 = 2.30$; P lies between 0.20 and 0.10				
7. He is apt to be one of the children who cause trouble	-	8	24	15
He is rather easily led into trouble	-	4	12	17
He is not one of the troublesome ones	0	20	60	64
Omissions		0	0	0
8. He is very competitive with other children	-	4	12	13
I regard him as normally competitive	+	14	42	63
He seems diffident about competing with them	-	7	21	8
He does not seem to care how he compares with them	-	7	21	12
Omissions		0	0	0

$\chi^2 = 4.71$; P lies between 0.05 and 0.02

TEACHER'S REPORT FORM (*continued*)

	Evaluation	Sanatorium	Sanatorium × 3	Control
9. He is liable to get unduly rough during play time	—	7	21	7
He takes a normal part in rough and tumbles	+	17	51	69
He seems a bit frightened of rough and tumbles	—	7	21	17
Omissions		1	3	3
	$\chi^2 = 4.09; P$ lies between 0.05 and 0.02			
10. He is inclined to show off to attract attention	—	9	27	18
This is not one of his characteristics	0	23	69	78
Omissions		0	0	0
	$\chi^2 = 1.28; P$ lies between 0.30 and 0.20			
11. He concentrates well on a task	+	8	24	29
His concentration is not too bad	+	6	18	36
His attention wanders rather frequently	—	18	54	31
Omissions		0	0	0
	$\chi^2 = 5.83; P$ lies between 0.02 and 0.01			
12. He bosses his school mates about rather a lot	—	3	9	15
He is not bossy, but can stand up for himself alright	+	22	66	61
He tends to get bossed about	—	6	18	18
Omissions		1	3	2
13. He does not hesitate to be untruthful to get out of trouble	—	2	6	6
He tries to get out of trouble in this way on occasion	+	8	24	18
I can usually rely on his telling the truth	+	22	66	71
Omissions		0	0	1
14. He can settle down well to activities without suggestions from me	+	9	27	41
He is all right on his own at times	0	12	36	41
He does not seem to know what to do unless he is told	—	10	30	12
Omissions		1	3	2
	$\chi^2 = 6.08; P$ lies between 0.02 and 0.01			
15. He frequently seems to be up against me	—	0	0	1
At times he is friendly, at other times up against me	+	4	12	13
He is consistently friendly to me	0	23	69	74
He seems unable to form any real contact with me	—	4	12	7
Omissions		1	3	1
16. He does not work hard at his lessons	0	8	24	23
He works about as hard as most children of his age	+	19	57	56
He works exceptionally hard	0	4	12	16
Omissions		1	3	1
17. He keeps his friends satisfactorily for a boy of his age	+	27	81	87
He is unable to keep his friends	—	4	12	6
He does not make any friends at all	—	0	0	1
Omissions		1	3	2
18. He is over-sensitive to criticism	—	5	15	16
He takes criticism pretty well	+	21	63	63
He is inclined to pay too little attention to criticism	—	5	15	14
Omissions		1	3	3

	Evaluation	Sanatorium	Sanatorium × 3	Control
19. I have never seen him lose his temper with other children	0	16	48	68
He loses his temper with them now and again	+	15	45	25
He is apt to do so rather frequently	-	1	3	2
Omissions		0	0	1
20. He is inclined to be a bit too familiar with me	-	0	0	1
He talks spontaneously and naturally to me	+	25	75	73
He seems to find talking to me a bit difficult	0	5	15	21
He seems to have considerable difficulty in talking to me	-	1	3	1
Omissions		1	3	0
21. He does what he is told quicker than most children	0	5	15	14
He is about average in this respect	+	20	60	65
He is inclined to be disobedient	0	4	12	15
He is frequently disobedient	-	2	6	2
Omissions		1	3	0
22. He is apt to tell tales about his school mates	-	8	24	19
This is not a particularly frequent occurrence	+	12	36	28
He does not tell tales	0	11	33	48
Omissions		1	3	1

PART II

Place a tick against any of the following characteristics which apply to him/her.

	Sanatorium					
	Sanatorium		× 3		Controls	
	Yes	No	Yes	No	Yes	No
23. Crying easily	6	26	18	78	10	88
$\chi^2 = 1.53$; P is at 0.20						
24. Stammering, speech defect	3	29	9	87	8	88
25. Blinking, twitching	4	28	12	84	3	93
$\chi^2 = 2.47$; P lies between 0.20 and 0.10						
26. Nail-biting, thumbsucking, chewing pencils, clothes, etc.	6	26	18	78	9	87
$\chi^2 = 1.95$; P lies between 0.20 and 0.10						
27. Day-dreaming	13	19	39	57	15	81
$\chi^2 = 8.78$; P is less than 0.01						
28. Truanting	0	32	0	96	4	92
29. Pilfering	1	31	3	93	0	96